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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/665,177    09/19/00    SHIRAISHI

T    016907/1143

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MM71/1003

EXAMINER

PHAM, H

ART UNIT

PAPER NUMBER

2861

DATE MAILED:

10/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

**Office Action Summary**

Application N .

09/665,177

Applicant(s)

SHIRAISHI ET AL.

Examiner

Hai C Pham

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 6 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "deformable sheet" recited in claim 7 must be shown or the feature canceled from the claim. No new matter should be entered.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs not mentioned in the description:

- "17a" in Fig. 6;
- "18" in Fig. 7.

3. The drawings are objected to because:

- In Fig. 6, the reference label "convex portion of plastic lens" appears to point to one of the "projections" on the plastic lens 17.

Correction is required.

### ***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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5. The disclosure is objected to because of the following informalities:

- Page 21, reference number "21" should read --30--;
- Page 25, the lens 9Ya is first defined as a "*finite* focal lens" at line 2, and then is redefined as an "*infinite* focal lens" at lines 10, 12, 23, and on subsequent pages;
- Page 29, line 15, "image forming lens" should read --hybrid cylinder lens--.

Appropriate correction is required. Applicants are advised to carefully review the Specification and subsequently correct any other typographical errors.

#### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 4, line 2, "*the* resin lens" appears to lack antecedent basis.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

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by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

9. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Yamawaki et al. (U.S. 6,046,835.)

With regard to claim 1, Yamawaki et al. discloses a scanning optical apparatus comprising a light source (a semiconductor included in each of the two laser collimator units 21a, 21b,) forwardly deflecting optical set including a first lens (a collimator lens included in each of the two laser collimator units 21a, 21b) for providing light beams from said light source with a predetermined characteristic, and a second lens (cylinder lens units 22a, 22b) for converging said light beams from said first lens in a first direction (sub-scanning direction,) a polygonal mirror unit (1) for deflecting the light beams from said forwardly deflecting optical set into a second direction (main scanning direction) substantially perpendicular to said first direction, a third lens (imaging lens 12) for forming the light beams deflected by said polygonal mirror unit as an image onto a predetermined image surface (surface of the photosensitive drum 10) at substantially equal speed, said second lens includes a resin lens and a glass cylinder lens made of glass having a positive power in said first direction (the glass cylinder lens having positive power in the sub-scanning direction) and the resin lens of said second lens having a surface whose radius of curvature in said first direction is varied along said first direction (col. 3, lines 24-38.)

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. in view of Iizuka (U.S. 6,091,533.)

Yamawaki et al. discloses all the basic limitations of the claimed invention including the third lens having a positive power in the second direction (the imaging lens 73 and 74 both having positive power in the main scanning direction) (col. 6, lines 61-67 and col. 7, lines 1-6.)

However, Yamawaki et al. fails to teach the second lens having a negative power in the second or main-scanning direction.

Nevertheless, Iizuka discloses a scanning optical system comprising a laser light source (1,) a collimator lens (2,) a cylindrical lens (3,) a polygon mirror (4,) a curved mirror (5,) and a surface to be scanned (6) in which the cylindrical lens can be replaced by a toric lens having a negative power in the main scanning direction for the purpose of controlling the divergence of the deflected laser beam (col. 7, lines 40-47.)

Since Yamawaki et al. and Iizuka are both from the same field of endeavor, the purposes disclosed by Iizuka would have been recognized in the pertinent art of the same field of endeavor, the purposes disclosed by Iizuka would have been recognized in the pertinent art of Yamawaki et al. It would have been obvious at the time the invention

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was made to a person having ordinary skill in the art to modify the device of Yamawaki et al. with the aforementioned teaching of Iizuka for the purpose of controlling the divergence of the deflected laser beam.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. in view of Kobuchi et al. (U.S. 6,165,392.)

Yamawaki et al. further teaches the second lens including a resin lens with a surface having a negative power in said first direction (negative plastic concave cylinder lens with respect to the sub-scanning direction,) and a glass lens including one convex surface having a positive power in said first direction (glass convex lens.)

However, Yamawaki et al. fails to disclose a deformable sheet provided between the resin lens and the glass cylinder lens.

Nevertheless, Kobuchi et al. discloses a set of lenses (8 and 9) having a polarizing sheet or optical sheet (3) of constant thickness, as a functional sheet, inserted between the bodies of the lenses for the purpose of controlling the light transmission of the lenses.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the device of Yamawaki et al. with the aforementioned teaching of Kobuchi et al. for the purpose of controlling the light transmission of the cylindrical lenses.

***Allowabl Subj ct Matter***

13. Claims 5 and 6 are allowed.

14. The following is an examiner's statement of reasons for allowance: none of the prior art made of record discloses the claimed features related to a set of cylindrical lenses for use in a scanning optical device, which comprises a resin lens and a glass convex lens, with the resin lens having a projection, which abuts in a direction of the convex surface of the glass lens such that the projection of the resin lens and the glass cylinder lens contact with each other, along with the combined claimed limitations recited in claim 5.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (703) 308-0750. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

*Harsh Pham*

hcp  
September 28, 2001